# ISTE Computing Teachers Network - CS Firehose 2017

**SATURDAY**  
**June 24**

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## Keynote Opening Session  
12:00 pm - 12:50 pm

- **Dr. Carol Fletcher**  
  Deputy Director of the Center for STEM Education - UT Austin  
  *Leveling Up in Texas CS Education*  
  HBGCC 303 A/B

### 1:00 pm - 1:50 pm

- Hal Speed (CS4TX) - *Making Sense of Texas Computer Science Requirements and Pathways*
- Todd Beard - *Teaching Students Career and Future Ready Skills with Microsoft Imagine Academy*
- Beth Mossholder and Julie Stewart - *A Slice of Raspberry Pi*

### 2:00 pm - 2:50 pm

- Cliff Zintgraff, J. Sanchez, M. Maldonado-San Antonio K-12  
  *Cyber Security Education: The First 15 Years and Connections to CT*
- Todd Beard - *Hacking STEM*
- Dr. Leonard Brown (UT Tyler) - *Creating Problem Packets for Programming Contests*

### 3:00 pm - 3:50 pm

- Jennifer Bergland (TCEA) - *Update on Texas Computing Education Policy*
- Neal Manegold - *Get to Know Minecraft: Education Edition with Code Builder*
- Hal Speed - *Machina sapiens: "Artificial Intelligence" and the Future of Human Education*

### 4:00 pm - 4:50 pm

- Ryan Torbey (Harmony School of Science - Austin) - *Expanding Computer Science in Grades K-8*
- Todd Beard - *Make What's Next - CS for All: Coding In and Out of the Classroom*
- Karen North, Barbara Hewitt, Joe Kmoch, Trenton Hall, Morgan King, Corrina Alcoser, Adrianna Lopez, and Jannie Fernandez - *NCWIT Aspirations in Computing Panel Discussion*

### 5:00 pm - 5:50 pm

- John Jannone (TEALS) - *In-class Support for High School CS Teachers – Bring Industry Volunteers to your Classroom!*
- Todd beard - *Making + Coding = A More Inclusive Approach to Computing Education*
- Heidi Williams - *Wh'ARIS will you go? - Using augmented reality to engage community with student learning.*
Opening Session and Keynote
12:00 PM – 12:50 PM   HBGCC 303 A/B

Dr. Carol Fletcher (UT Austin C-STEM and WeTeach_CS) - Leveling Up in Texas CS Education

Dr. Carol Fletcher is the Deputy Director of the Center for STEM Education at UT Austin where she directs several statewide professional development programs for STEM teachers such as the TRC and WeTeach_CS serving over 10,000 educators annually through 80+ projects involving all 20 Education Service Centers, 40+ colleges and universities, and 800+ school districts. Carol has been elected to 6 terms on the Pflugerville ISD Board of Trustees since 2001, serving as Board President for five years. She is active in legislative and school finance issues as well as issues related to STEM education and school accountability. Her experiences as a teacher, policymaker, parent and university administrator result in a unique perspective on the challenges and potential solutions our country faces regarding STEM education and workforce development. As a result, she has served in numerous leadership roles that bridge the gap between education, workforce, and policy such as the Chair of the Texas Computer Science Task Force, CS4TX Steering Committee, Texas Association of School Boards (TASB) Legislative Advisory Council, the Comptroller's Financial Allocation Study for Texas (FAST) Advisory Board, the Texas Business and Education Coalition (TBEC) STEM Action Team, the Texas Education Agency’s STEM Educator Standards Committee, E3 College and Career Success Leadership Team, NSF’s Texas Girls Collaborative Project Champions Board, NSF’s Expanding Computing Education Pathways (ECEP) Alliance state lead, UTeach Advisory Board and Hill Country Science Mill Advisory Board.

Computing jobs are the #1 source of new wages in the U.S. but only 3% of Texas high school graduates take a CS course. How can Texas educators open doors to the creative, in-demand jobs of the Innovation Economy for every Texas student, regardless of gender, ethnicity or zip code? WeTeach_CS is a Texas Education Agency funded project at UT Austin that provides professional development to teachers and districts that want to develop and grow a K-12 computer science pathway. Learn how teachers can obtain high school CS certification, learn coding, programming and computational thinking, and earn a $1,000 stipend through online and in-person PD. Free, research-based resources for teaching CS and diversifying student enrollment in CS courses will also be shared.
Special thanks to Mary Williams and our friends at Microsoft (ISTE Mission Sponsor) for their generous support of the CS Firehose! *Microsoft: Empowering the students of today to create the world of tomorrow.*

**Session 1**
1:00 PM – 1:50 PM

*Strand I – CS in TX*
HBGCC 303 A/B

**Hal Speed (CS4TX) - Making Sense of Texas Computer Science Requirements and Pathways**

Texas is a national leader in computer science education. This session will outline the requirements for offering computer science and how to build a pathway to satisfy graduation and endorsement requirements in high school. And it will also explore tools and resources can be used in the classroom and out-of-school to engage learners.

*Strand II – Microsoft*
HBGCC 301A

**Todd Beard (Microsoft) - Teaching Students Career and Future Ready Skills with Microsoft Imagine Academy**

The Microsoft Imagine Academy provides tools that will enhance instructors' skills and increase opportunities for students as they prepare for their future. The curriculum prepares learners for Microsoft certification - credentials that can help differentiate individuals in today's competitive job market, broaden employment opportunities, and result in higher earning potential. This session will focus on the computer science and data science curriculum offerings in MSIA.

*Strand III – Computer Science and Computational Thinking*
HBGCC 301B

**Beth Mossholder and Julie Stewart - A Slice of Raspberry Pi**

Come and learn what Raspberry Pi is, how they work, resources, and ways to incorporate. I never thought I would be a Pi user and now I fall in love more every day. Physical computing, coding, and engineering can all be a part of your class!
Strand I – CS in TX  
HBGCC 303 A/B

Cliff Zintgraff (IC² Institute/UT Austin, SASTEMIC), Joe Sanchez (CyberTexas Foundation), Michael Maldonado (Southwest ISD) - San Antonio K-12 Cyber Security Education: The First 15 Years, and Connections to Computational Thinking

San Antonio has the second highest number of certified cyber security professionals in the nation. For fifteen years, our community has leveraged this strength and achieved mutual benefits for students, educators and industry by educating new generations of cyber security professionals. This session will describe the main K-12 cyber security programs in the region, including a dedicated security academy, middle and high school formal programs, and the CyberPatriot cyber defense competition. Research results will be shared regarding how cyber security activities can help students develop skills in computational thinking, the same skills that underlie success in computer science.

Strand II – Microsoft  
HBGCC 301A

Todd Beard (Microsoft) - Hacking STEM

Want help sparking creativity in your students with Science, Technology, Engineering and Math projects? Join Microsoft Educators as they show you how you can take accessible materials like spools and cups to create fun and fascinating devices like robotic hands and earthquake simulators. Level: Beginner

Strand III – Computer Science and Computational Thinking  
HBGCC 301B

Dr. Leonard Brown (UT Tyler) - Creating Problem Packets for Programming Contests

Programming contests are great ways to get students more engaged in the field of computer science. The success or failure of this type of contest can often hinge upon the quality of the set of problems teams are meant to solve. This presentation will describe the issues and challenges of creating problem packets including several errors new packet writers commonly make.
Session 3  
3:00 PM – 3:50 PM

Strand I – CS in TX  
HBGCC 303 A/B

Jennifer Bergland (TCEA) - Update on Texas Computing Education Policy

Texas is among the nation’s leaders in promoting the teaching and learning of computer science and computational thinking in K-12. Hear about the latest advances in state policy resulting from recent legislative and state education board initiatives.

Strand II – Microsoft  
HBGCC 301A

Neal Manegold (Microsoft) - Get to Know Minecraft: Education Edition with Code Builder

Code Builder for Minecraft: Education Edition is a brand-new feature that allows educators and students to explore, create, and play in an immersive Minecraft world. Join fellow educators to learn how Code Builder can develop computational thinking and computer science skills and engage students. Level: Intermediate.

Strand III – Computer Science and Computational Thinking  
HBGCC 301B

Hal Speed - Machina sapiens: "Artificial Intelligence" and the Future of Human Education

Machine intelligence is evolving exponentially and continues to surpass human intelligence at an alarming rate. How must the class of 2030 and beyond prepare for this sci-fi world of the future? Will technology innovation displace human workers or create new opportunities for humans? Is there an inherent advantage to being a bio-chemical machine instead of an electro-digital machine?
Session 4
4:00 PM – 4:50 PM

Strand I – CS in TX
HBGCC 303 A/B

Ryan Torbey (Harmony School of Science) - Expanding Computer Science in Grades K-8

As educators, we need to be enabling our children to be creators, not just consumers, in the digital age. Computer science education is the key to allowing our students to reach their full potential in the 21st century. Often taught only in high school, the time is right to bring computer science to every grade. This session will highlight the importance and purpose of computer science education for elementary and middle school students. We will examine the current efforts in Texas to expand K-8 computer science, as well as provide strategies and resources to help you get started in your community.

Strand II – Microsoft
HBGCC 301A

Todd Beard (Microsoft) - Make What’s Next - CS for All: Coding In and Out of the Classroom

If your students love to play computer games, imagine their excitement when they start coding games themselves! In this session, you will gain tips and resources to start a school coding club, even if you have no experience coding yourself! Using free online tools like Kodu Game Lab, Touch Develop and Project Spark, students of any grade level can develop a wide variety of games. They’ll have a blast while learning important 21st Century skills.

Strand III – Computer Science and Computational Thinking
HBGCC 301B

Karen North, Barbara Hewitt, Joe Knoch, Trenton Hall, Morgan King, Corrina Alcoser, Adrianna Lopez, and Jannie Fernandez - NCWIT Aspirations in Computing Panel Discussion

Join us as NCWIT Aspirations coordinators and students who were award recipients share the impact of computer science on their lives. Get resources to encourage your students to pursue their passions in computing and build your aspirations team. Learn about scaling your CS program through the AspireIT K-12 Outreach Program, Aspirations in Computing Educator Award, AiC Student award, the NCWIT Collegiate Award and AiC community. NCWIT Aspirations in Computing (AiC) provides a long-term community for female technologists, from K-12 through higher education and beyond, encouraging persistence in computing through continuous engagement and ongoing encouragement at each stage of their educational and professional development.
Session 5
5:00 PM – 5:50 PM

Strand I – CS in TX
HBGCC 303 A/B

John Jannone (TEALS) - In-class Support for High School Computer Science Teachers – Bring Tech Industry Volunteers to your Classroom!

TEALS (Technology Education and Literacy in Schools) is a nationwide organization that helps high schools build and grow sustainable computer science programs by pairing existing high school teachers with volunteers from the tech industry. Together, TEALS volunteers and their partner teacher team-teach computer science classes. TEALS provides multiple models of support depending on teacher experience with CS, curriculum, volunteer training, year-long support, and access to a nationwide CS community. Come learn how TEALS through Microsoft Philanthropies is supporting over 350 high schools in 2017-18 and how you can get involved!

Strand II – Microsoft
HBGCC 301A

Todd Beard (Microsoft) - Making + Coding = A More Inclusive Approach to Computing Education

Come join Microsoft Educators to learn about Microsoft MakeCode – a new approach to computing education that combines the magic of making with the power of code, in a way that engages every student in computational thinking. Level: Beginner

Strand III – Computer Science and Computational Thinking
HBGCC 301B

Heidi Williams - Wh'ARIS will you go? Using augmented reality to engage the community with student learning.

This session will review a case study of a 3rd grade class from Waukesha, Wisconsin that engaged their community in a Walking Tour. After researching significant historical landmarks in their city and locating them on the ARIS Map, students created informational flyers, papers and videos that anyone in the community could view when they walked by the physical landmark. Come hear about their journey and how you can work with your students to create a Walking Tour of your own community. Students in grades 3-12 can be successful in using the ARIS app to create augmented reality tours!